Please replace the paragraph beginning at page 6, line 16, with the following rewritten paragraph:

--In order to attain the above-described object, according to the present invention, there is provided a magnetic bearing apparatus characterized by comprising a rotor, a motor portion provided in the rotor for rotating the rotor by a magnetic force, magnetic supporting coils for magnetically supporting the rotor in a predetermined position, magnetic force unbalance obtaining means for obtaining an unbalance of the magnetic force generated in the motor portion by the rotor run-out in the radial direction from the predetermined position and applied to the rotor, and magnetic support adjustment means for adjusting the magnetic force of the magnetic supporting coils so as to resist the unbalance of the magnetic force.--

Please replace the paragraph beginning at page 7, line 5, with the following rewritten paragraph:

--If the magnetic bearing apparatus is thus constructed, a force effective for resisting unbalance of the attractive force between the rotor and the stator caused by run-out of the position of the rotor in the radial direction is generated in the magnetic bearing to thereby make it possible to reduce the vibration of the stator.--

Please replace the paragraph beginning at page 8, line 10, with the following rewritten paragraph:

--Further, it is possible to calculate the run-out of the rotor in the motor portion by detecting the run-out of the rotor by a radial direction sensor and calculate it from the geometric positional relation among the motor portion, the radial direction sensor, and the rotor, and the run-out value. If the run-out of the rotor in the motor portion is inferred in this way, it is possible to obtain the unbalance between the rotor and the stator in the motor portion from the angle of the magnetic field and the rotational angle of the magnetic poles of the rotor and the value of this run-out vibration through calculation or experimental values. Then it is possible to control the bearing force of the magnetic bearing so as to offset the unbalance of the magnetic force. In addition, the unbalance of the magnetic force may be kept in the form of a database of the angle of the magnetic field, the rotational angle of the magnetic poles and the run-out vibration of the rotor as variables in advance. Then, when the unbalance of the magnetic force is obtained from the run-out vibration of the rotor, it is possible to obtain the unbalance from the database by using the angle of the magnetic field, the rotational angle of the magnetic poles and the amount of run-out at this time.--

Please replace the paragraph beginning at page 19 line 23, with the following rewritten paragraph:

--The method for seeking Fsx will now be described. Fsx is a function of three variables including X, the direction of the magnetic field generated by the coils 6 and the rotary angle γ from the maximum torque of the rotor 1 (assuming that the size of the magnetic field generated by the coils 6 is kept constant). This is also the case with respect to Fsy.--

Please replace the paragraph beginning at page 25 line 19, with the following rewritten paragraph:

--The rpm signal represents the rpm of the rotor 1 and the permanent magnet pole position switchover signal represents the timing when the switchover or junction position of the poles of the N-pole and S-pole of the permanent magnet 11 passes through the sensor installed within the motor. The position of the magnetic poles of the permanent magnet 11 is inferred from both signals. This is outputted to an Fsx calculation section 66 and an Fsy calculation section 69. Here, if the permanent magnet pole position switchover signal is counted, the rpm signal may be obtained and the rpm sensor per se may be dispensed with.--

Please replace the paragraph beginning at page 26 line 5, with the following rewritten paragraph:

--The radial directions sensors 2a and 2b of the bearing portion 8 and the radial direction sensors 4a and 4b of the bearing portion 9 are connected to a motor portion rotor run-out estimating unit 63. The xy components of the run-out of the rotor 1 in the bearing portions 8 and 9 are detected by means of the respective sensors. These values are inputted into the motor portion rotor run-out estimating unit 63. The motor portion 10 rotor run-out estimating unit 63 calculates and outputs the run-outs ΔX and ΔY of the rotor 1 in the motor portion 10 on the basis of Formulae (4) and (5). Then, X0 and Y0 are added to ΔX an ΔY, and X-+ΔX and Y0+ΔY are inputted into an Fsx calculation section 66 and an Fsy calculation section 69, respectively.--

Please replace the paragraph beginning at page 27 line 8, with the following rewritten paragraph:

--An Fsy estimating section 67 is composed of a pattern estimating section 68 and the Fsy calculation section 69 and infers the magnetic force generated in the -x′ direction when the rotor 1 is swung in the y′ direction, i.e., Fsy in the same manner as in the Fsx estimating unit 64.--

Please replace the paragraph beginning at page 29 line 1, with the following rewritten paragraph:

--The term PID control means control of the coil currents for causing the change of the magnetic attractive force between the rotor 1 and the coil 3 to be in proportion to the velocity and the run-out of the rotor. The magnetic bearing apparatus obtains the bearing force through PID control. Namely, if the rotor 1 is swung one way in the radial direction, the magnetic force of the coil 3 is fed back and controlled so that this run-out is returned back or eliminated.--

Please replace the paragraph beginning at page 29 line 9, with the following rewritten paragraph:

--The output signal of the PID compensator 74a is amplified in the current amplifier 75a and a predetermined current is fed to the coil 3a. Then, the rotor 1 obtains the predetermined attractive force in the x direction of the bearing portion 8 and is supported at a predetermined air gap with respect to the coil 3.--

Please replace the paragraph beginning at page 29 line 17, with the following rewritten paragraph:

--A current value from the necessary current estimating unit 73 is added to the current value to be fed